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14. ABSTRACT

Establishing effective national missile defense is a top priority for the United States military. Improved missile defense assets, including the development of Aegis ballistic missile defense (BMD), provide a strategic deterrent and a limited ability to defeat ballistic missile attacks. Operational commanders must leverage the assets developed for national missile defense to counter the more prevalent, likely and challenging threat of theater ballistic missiles. To do so requires the application of sound operational art. Specifically, clearly defined command and control relationships that ensure effective and sustained joint theater missile defense (TMD) are needed. The thesis of this paper is that a support relationship is the optimal C2 relationship for Aegis ships in TMD because it best provides the necessary logistics and protection for the Aegis BMD assets without sacrificing their efficacy in traditional maritime missions. This paper provides background information about the operational capabilities and limitations of Aegis BMD and discusses important distinctions between national and theater missile defense. Then it explains why the support relationship is best suited for Aegis BMD in the TMD mission and offers recommendations to ensure effective TMD C2 relationships are established.

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One More Mission for a Multi-mission Platform

An argument for support relationships for Theater Missile Defense

by

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LCDR USN

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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10 May 2007

Abstract

One More Mission for a Multi-mission Platform:
An argument for support relationships for TMD

Establishing effective national missile defense is a top priority for the United States military. Improved missile defense assets, including the development of Aegis ballistic missile defense (BMD), provide a strategic deterrent and a limited ability to defeat ballistic missile attacks. Operational commanders must leverage the assets developed for national missile defense to counter the more prevalent, likely and challenging threat of theater ballistic missiles. To do so requires the application of sound operational art. Specifically, clearly defined command and control relationships that ensure effective and sustained joint theater missile defense (TMD) are needed. The thesis of this paper is that a support relationship is the optimal C2 relationship for Aegis ships in TMD because it best provides the necessary logistics and protection for the Aegis BMD assets without sacrificing their efficacy in traditional maritime missions. This paper provides background information about the operational capabilities and limitations of Aegis BMD and discusses important distinctions between national and theater missile defense. Then it explains why the support relationship is best suited for Aegis BMD in the theater missile defense mission and offers recommendations to ensure effective TMD C2 relationships are established.

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List of Abbreviations

AADC	Area Air Defense Commander
AD	Air Defense
AOR	Area of Responsibility
ASUW	Anti-Surface Warfare
ASW	Anti-Submarine Warfare
BMD	Ballistic Missile Defense
C2	Command and Control
CCDR	Combatant Commander
CDRUSSTRATCOM	Commander, United States Strategic Command
CWC	Composite Warfare Commander
LRS&T	Long-Range Surveillance and Tracking
JFACC	Joint Forces Air Component Commander
JFMCC	Joint Forces Maritime Component Commander
JFC	Joint Force Commander
JTF	Joint Task Force
NMD	National Missile Defense
NMDS	National Missile Defense System
OPCON	Operational Control
TACON	Tactical Control
TASW	Theater Anti-Submarine Warfare
TMD	Theater Missile Defense

INTRODUCTION

On 22 March 2004 the Secretary of the Navy announced, "The Missile Defense Agency and the Navy are moving to rapidly deploy missile defense capabilities which will provide . . . [a] highly capable layered defense deterrent force to defend against world-wide ballistic missiles."[1] Indeed, United States Navy Aegis cruisers and destroyers are forward deployed today, contributing to that strategic deterrent force. Due to the potential for North Korea, a like-minded nation, or even a non-state actor to arm ballistic missiles with nuclear warheads, our nation's leadership has made national missile defense (NMD) a top priority.[2] However, it is critical to recognize that while new missile defense technology can provide a strategic deterrent and even a limited defensive capability, the technology does not, in and of itself, adequately address the more prevalent, likely, and challenging theater ballistic missile threat facing operational commanders today.[3]

As the Navy's Aegis platforms continue to demonstrate their effectiveness in missile defense and international actors acquire improved ballistic missile technology, operational commanders increasingly depend upon Aegis systems for ballistic missile defense (BMD) in their theaters. Yet, the absence of clearly defined command and control (C2) relationships

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[1] Gordon R. England, Secretary of the Navy (remarks, National Missile Defense Conference, Washington, D.C., 22 March 2004), http://www.navy.mil/navydata/people/secnav/england/speeches/england040322.txt (accessed 27 February 2007).

[2] *National Policy on Ballistic Missile Defense, National Security Presidential Directive/NSPD-23* (16 December 2002), http://www.fas.org/irp/offdocs/nspd/nspd-23.htm (accessed 13 April 2007). The President states, "Defending the American people against these new threats is my highest priority as Commander in Chief, and the highest priority of my Administration." See also U.S. President, The National Security Strategy of the United States of America, (Washington, DC: White House, 2002), 18 or Secretary of Defense, The National Defense Strategy of the United States of America, (Washington, DC: DOD, March 2005), 3.

[3] It is my personal assessment that the theater threat is more "prevalent, likely and challenging." For a discussion of the theater and homeland threats that formed the basis of this assessment see Chairman, U.S. Joint Chiefs of Staff, Countering Air and Missile Threats, Joint Publication (JP) 3-01 (Washington, DC: CJCS, 5 February 2007), I-8-I-9 and "General Planning Considerations" on V-17.

for Aegis BMD platforms remains a significant impediment to fielding a persistent and effective theater missile defense (TMD). In defining the C2 relationship, operational commanders must balance missile defense with other strategic, operational and tactical requirements of the joint force. Aegis cruisers and destroyers are multi-mission platforms that are limited in their ability to provide ballistic missile defense and can not be assigned to a full-time missile defense role without sacrificing capabilities in other mission areas. Furthermore, Aegis ships performing BMD have unique logistic and protection requirements that should be a foremost concern at the operational level. Commanders should seek a C2 relationship that will best provide that logistics and protection in order to ensure a persistent, effective theater missile defense capability without significantly sacrificing Aegis ship contributions to other missions in the joint operations area. The thesis of this paper is that a support relationship is the optimal C2 relationship for Aegis ships in TMD because it best provides the necessary logistics and protection for the Aegis BMD assets without sacrificing their efficacy in traditional maritime missions.[4]

This paper will provide background information about the operational capabilities and limitations of Aegis BMD and discuss important distinctions between national and theater missile defense. Then it will explain why the support relationship is best suited for Aegis BMD in the TMD mission and offer recommendations to ensure effective TMD C2 relationships are established.

[4]Support is defined as "1. The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action. 2. A unit that helps another unit in battle. 3. An element of a command that assists, protects, or supplies other forces in combat." Chairman, U.S. Joint Chiefs of Staff, JP 3-0, Joint Operations, (Washington DC: CJCS, 17 September 2006), GL-30. The support relationship is often referred to as a "supported-supporting" relationship. The argument here is that the maritime component should be tasked to provide Aegis BMD in support of the air component for the accomplishment of TMD.

BACKGROUND

We will focus our military planning, posture, operations, and capabilities on the active, forward, and layered defense of our nation, our interests, and our partners.

-The National Defense Strategy of the United States of America, March 2005

What does Aegis really bring to the fight?

The Navy's Aegis ships were designed to perform a variety of tasks, including but not limited to anti-submarine warfare (ASW), air defense (AD), carrier escort, and strike missions. Following the U.S. withdrawal from the Anti-Ballistic Missile Treaty in 2002, the Aegis Ballistic Missile Defense Program was established under the Missile Defense Agency. In the words of Rear Admiral Alan Hicks, the Aegis BMD Program Director, "Aegis BMD adds another significant dimension to the already robust general-purpose, multi-mission cruisers and destroyers."[5] The Aegis weapons system, which was originally developed for air defense, requires a six-week, $10.5 million modification in order to become BMD-capable.[6] Leveraging decades of Aegis and Standard Missile research, the Aegis BMD Program quickly developed the capability to detect, track and discriminate ballistic missiles. Since 2004 Aegis BMD ships have served as long-range surveillance and tracking (LRS&T) platforms, essentially functioning as a first layer and early warning sensors, for the National Missile Defense System (NMDS). In 2005 Aegis BMD ships were first armed with the Standard Missile (SM)-3 Block 1A, which provides the capability to engage some short and medium range ballistic missiles outside of the earth's atmosphere in what is known as a late,

[5] Alan B. Hicks, "Extending the Navy's Shield—Sea-Based Ballistic Missile Defense," (*United States Institute Proceedings*. 133, no. 1 (January 2007). http://www.proquest.com/ (accessed 15 February 2007).
[6] Jack. Dorsey, "Navy On Front Line of Missile Defense," *Norfolk Virginian-Pilot*, October 21, 2006, http://content.hamptonroads.com/story.cfm?story=113041&ran=49298 (accessed 17 April 2007).

mid-course intercept.[7] This capability enables Aegis BMD platforms to serve as both sensors and interceptors for theater missile defense, while they perform only the LRS&T mission for the NMDS.

One of the primary advantages of Aegis BMD is that it can be forward deployed anywhere in international waters without the approval or support of a host nation. It can also be repositioned quickly to defend against newly discovered or mobile ballistic missile launch sites. While naval leaders will tout the independence, versatility and self-sustainability of a ship at sea, it is important to note that, especially during a conflict, the Aegis ships will require both logistic and defense support when forward deployed for any extended period of time. Commanders from other services may tend to view Aegis BMD platforms as merely missile batteries or forward-deployed sensors. Such a view neglects the multi-mission capabilities that are so critical to the accomplishment of a myriad of other joint force objectives. The bottom line is that commanders must have a realistic expectation of Aegis BMD, viewing it as a unique component (with unique capabilities and limitations) of a joint TMD solution.

At the end of 2006 the Navy had six engage-capable Aegis BMD ships and 10 LRS&T-only ships all assigned to the Pacific. Current plans call for 18 Aegis ships with the LRS&T and engagement capability by 2010.[8] (Table 1) This projected force can not possibly provide an around-the-clock "sea shield", ready at all times to track or engage

[7] Missile Defense Agency, A Day in the Life of the BMDS: Missile Defense Handbook. Third Edition. http://www.mda.mil/mdalink/pdf/bmdsbook.pdf (accessed 27 February 2007), 17. For a concise history of the program and planned capabilities see Ronald O'Rourke, Sea-Based Ballistic Missile Defense—Background and Issues for Congress, RL33745 (Washington, DC: Congressional Research Service, 2006), 6-8.

[8] Navy Office of Information, "Navy Support of Ballistic Missile Defense (BMD)," (Rhumb Lines: Straight Lines to Navigate By, 5 December 2006). http://www.navy.mil/navco/speakers/speakersnotes/ 2006-DEC-11_Speakers_Notes.doc (accessed 13 April 2007). See also Hicks, Extending the Navy's Shield.

incoming ballistic missiles. In practice, a small number of the BMD-capable ships are forward deployed and rely upon indications and warning from national sources to give them time to transition to a "missile defense alert" status. So it is possible that no Aegis BMD ships are actually performing the BMD mission at a given time. Still, by maintaining even a small presence in the western Pacific, Aegis BMD enhances the deterrent effect of the NMDS and reassures regional allies, thus contributing to the accomplishment of two key strategic objectives.

Table 1: Aegis BMD Force Structure (as of the end of 2006)

- 3 CGs and 3 DDGs are fully configured with the capability to engage short-medium range ballistic missiles and provide LRS&T. Fully configured ships are marked with * below.
- 10 DDGs have LRS&T in support of another MDA program, the Ground Based Midcourse Defense (GMD) system.
- All 18 platforms will be identically equipped by 2009

* USS Lake Erie (CG 70)	* USS Curtis Wilbur (DDG 54)	USS Benfold (DDG 65)	USS Fitzgerald (DDG 62)
* USS Port Royal (CG 73)	* USS Decatur (DDG 73)	USS Hopper (DDG 70)	USS Milius (DDG 69)
* USS Shiloh (CG 67)	USS John Paul Jones (DDG 53)	USS O'Kane (DDG 77)	USS Higgins (DDG 76)
* USS Stethem (DDG 63)	USS Paul Hamilton (DDG 60)	USS Russell (DDG 59)	USS John S. McCain (DDG 56)

Two Atlantic Fleet DDGs (To Be Announced)

Source: Navy Office of Information, "Navy Support of Ballistic Missile Defense (BMD)," (Rhumb Lines: Straight Lines to Navigate By, 5 December 2006). http://www.navy.mil/navco/speakers/speakersnotes/2006-DEC-11_Speakers_ Notes .doc (accessed 13 April 2007).

At the operational level, this deterrent effect is important, but the "highly capable layered defense" mentioned by the Secretary of the Navy in 2002, is perhaps more so. For modern states and non-states may not be pacified with traditional notions of deterrence, and a major regional conflict with a nation currently in possession of ballistic missiles (e.g. Iran, North Korea, China, or Russia) would likely result in the use of theater, if not strategic missiles.

Therefore, the limited number of Aegis BMD assets causes two significant areas for concern for commanders at the operational level. First, there are an insufficient number of Aegis BMD platforms to adequately defend all forward operating bases and regional allies

from ballistic missiles during major combat operations. The shortage is exacerbated by maintenance and replenishment requirements, which prohibit a single Aegis ship from indefinitely performing a 24-hour missile defense task. Therefore, two or more ships are required for each target area in order to provide around-the-clock defense. Current Aegis force levels are based upon dated operations plans that did not foresee the role of Aegis in BMD.

Second, when Aegis BMD assets perform missile defense missions, there can be increased vulnerability and decreased mission effectiveness which impact the entire maritime force. Aegis ships are constrained geographically while performing missile defense. To perform BMD the ship must be positioned between the launch site and the target along its trajectory in order to detect and engage a ballistic missile. Such a station could prevent or limit the Aegis platform's ability to perform other missions, such as antisubmarine warfare or land attack. If the station is far from its strike group, the ship's position can prevent it from offering defense to the force and reduces tactical and logistics effectiveness. The enemy, who knows the trajectory of the weapon, can narrow down the location of the BMD ship, making the ship more vulnerable to attack. Finally, but perhaps most significantly, the Aegis system is less capable versus aircraft and cruise missiles while operating in the missile defense mode.[9] Thus, the primary mission for which the Aegis system was designed is performed less effectively during BMD tasking.

Commanders must consider Aegis limitations and vulnerabilities associated with the missile defense mission and balance the Aegis BMD capability with requirements for the ship to perform other missions. They must determine whether additional measures are

[9] O'Rourke, Background and Issues for Congress, 3.

required to protect the Aegis BMD ship onstation and compensate for the absence of the Aegis ship in defending the maritime force. The C2 relationship of Aegis ships in TMD significantly impacts this balance.

National missile defense, theater missile defense and C2 relationships

While a BMD system for homeland defense has the highest national priority, naval and joint force requirements also call for integrated theater missile defense systems that can effectively protect forward operating forces-ashore and afloat-and population centers from both ballistic- and cruise-missile attack.

-- Rear Admiral Alan B. Hicks, USN, Program Director, Aegis Ballistic Missile Defense
Extending the Navy's Shield: Sea-based Ballistic Missile Defense

When discussing ballistic missile defense C2 relationships, it is useful to distinguish national missile defense (NMD) and TMD. Command relationships for Aegis BMD assets may differ significantly for NMD and TMD for several reasons.

First, NMD is largely a strategic mission focused on protecting the homeland, while the TMD mission ranges from tactical to operational and theater-strategic in its scope. Protecting the homeland from a ballistic missile attack, especially one involving a weapon of mass destruction, is a national strategic goal. Protecting regional allies, bases and infrastructure overseas, while an important priority, usually falls at the theater-strategic or operational level of war. However, ballistic missiles can also be used to strike ships in port, troops in the field, amphibious forces or other operational or tactical targets. It is reasonable to expect different command relationships at the different levels of war.

Second and related, is the level at which the C2 relationships are determined. The three geographic Combatant Commanders (CCDR) who have U.S. territory in their area of responsibility (AOR) have the primary responsibility for the NMD mission. However, since ballistic missile threats to the homeland can originate from any geographic region, each

geographic CCDR is tasked to deter and be prepared to strike these threats in his AOR. The Commander, United States Strategic Command (CDRUSSTRATCOM) coordinates the NMD efforts of the CCDRs to counter this global missile threat. However, within a geographic theater, each CCDR has the authority and responsibility to counter threats, including ballistic missile threats, to the forces in his theater. CDRUSSTRATCOM does provide worldwide ballistic missile warning and attack assessment to the relevant geographic CCDR for BMD, but it does so in a supporting role.[10] Thus, each geographic CCDR or a subordinate joint task force (JTF) commander must determine the command relationships for TMD in the AOR or joint operations area.

Third, the National Missile Defense System is a funded national requirement, and for strategic reasons theater missile defense is no longer considered a distinct capability.[11] Therefore, geographic CCDRs must glean what they can from the NMDS and leverage it to face threats in their region. Considering the corresponding scarcity of assets, the command relationships for missile defense can significantly impact the effectiveness of TMD at the operational and theater-strategic levels.

Fourth, as discussed above, the role of Aegis BMD in the NMDS is one of a forward sensor (LRS&T). In TMD missions Aegis BMD platforms can perform both LRS&T and interceptor missions. The command relationship for the Aegis BMD ships may require different command relationships depending upon their role in the mission.

Fifth, based upon current adversary capabilities, the likely near-term threat is one to allies and overseas bases, not to the homeland. Not since the end of the Cold War has the

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[10] Countering Air and Missile Threats, JP 3-01, I-9-I-11.

[11] In NSPD-23 (16 December 2002) the President "eliminated the artificial distinction between 'national' and 'theater' missile defenses" based upon the "blurring" of capabilities and a desire to reassure allies that we are pursuing a missile defense that will enhance both homeland and theater security. *National Policy on Ballistic Missile Defense, NSPD-23.*

United States faced a likely homeland ballistic missile threat. The Scud missiles launched by Iraq during the Persian Gulf War and recent missile tests by North Korea demonstrate both the danger and proliferation of short and medium range ballistic missiles. Thus, while NMD is rightly a higher priority, the threat facing U.S. forces, interests and allies today is posed by theater ballistic missiles. Command relationships and employment of limited Aegis BMD assets must optimize existing capabilities to counter existing threats.

This list is certainly not exhaustive, but these differences alone illustrate the need for unique consideration of theater and national missile defense C2 relationships.[12] With a clear understanding of Aegis BMD capabilities and the logic of distinguishing TMD from NMD, it is possible to focus on the operational functions that must be considered in order to determine the optimal C2 relationship for Aegis BMD assets in TMD.

DISCUSSION

A support relationship is optimal

So which C2 relationships optimize the joint force's capability to employ Aegis ships for TMD? Which C2 relationships maximize Aegis capabilities to accomplish other (non-BMD) objectives in the joint operations area? If these questions had the same answer, there would be no ambiguity with regard to the optimal C2 relationship for Aegis BMD ships. Yet these questions might be answered differently by each service and functional component of a given joint force in a given theater. It is important to emphasize simply, that the first

[12] Due to significant differences in threats, geography, and asset distribution between the regions of geographic CCDRs, it is conceivable that each theater might desire unique C2 relationships. Such an analysis is beyond the scope of this paper, however, this discussion is intended to be applicable to a JFC employing Aegis BMD assets in any region. Since the overwhelming majority of Aegis BMD ships are in the Pacific, this paper was written specifically with the PACOM area of responsibility in mind.

question ought not be answered without considering second. The missile defense mission is critical and the stakes of failure are higher by comparison, but missile defense is not the only mission performed by Aegis cruisers and destroyers. Those "other" missions (AD, ASW, strike, anti-surface warfare (ASUW), etc.) remain critical to the success of major combat and other operations, even when confronting a ballistic missile threat.

Joint Doctrine for Countering Air and Missile Threats (JP 3-01) states that the Joint Force Commander "(JFC) normally tailors forces to the specific tasks to enable effective spans of control, responsiveness, tactical flexibility, and protection…[A] clear command relationship and properly assigned responsibilities are essential for effective and efficient operations."[13] However, the publication offers little guidance on what the "clear command relationship" should be. According to doctrine, TMD falls under defensive counter air operations and is the responsibility of the Area Air Defense Commander (AADC).[14] Usually the Joint Forces Air Component Commander (JFACC), the component commander with the preponderance of air and missile defense capability, assumes the responsibilities of AADC, and is most often the Air Force Component Commander.[15] Aegis ships are most often under the operational and tactical control (OPCON and TACON) of the Joint Forces Maritime Component Commander (JFMCC) or his subordinates. [16] Thus, for joint TMD with established functional component commanders, Aegis BMD assets (under the JFMCC)

[13] Countering Air and Missile Threats, JP 3-01, xi. For consistency and simplicity, the JFC will be used throughout this discussion when referring to the commander responsible for joint TMD. As discussed above the TMD responsibility lies with the geographic CCDR who has the authority to designate a subordinate JFC. When "JFC" is used in this discussion it also applies to a CCDR, if a JFC has not been designatioe.
[14]Countering Air and Missile Threats, JP 3-01, II-10.
[15] Chairman, U.S. Joint Chiefs of Staff, Command and Control for Joint Air Operations, JP 3-30 (Washington, DC: CJCS, 5 February 2007), II-2. Also JP 3-01, II-6.
[16] OPCON is " the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. TACON is "Command authority over assigned or attached forces . . . that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned." Joint Operations, JP 3-0, GL-24, 31.

represent a critical piece of the missile defense puzzle for the JFACC/AADC. "Unity of effort, centralized planning and direction, and decentralized execution have proven to be vital tenets for countering air and missile threats."[17] In planning TMD, the JFACC will employ these principles and seek to utilize Aegis BMD platforms in an integrated air defense system (IADS) to provide a layered defense against the threat.[18] The relationship between Aegis BMD ships and the JFACC, therefore, is crucial to the success of TMD.

Joint doctrine discusses "essential principles" of integrated air defense systems (IADS),[19] which are truly critical to tactical success of missile defense. But in the simplest terms, the operational level commander must ensure only that the BMD-capable forces are sustained in position with sufficient time and resources to react to a ballistic missile launch.[20] Considering the forward geographic positions which Aegis BMD ships assume for missile defense, the primary operational concerns, after positioning the ships onstation, should be logistics and protection of these forward platforms. When the JFC establishes a support (or as it is often called, a supported-supporting) relationship between the JFACC and the JFMCC for TMD, he best accounts for the operational functions of logistics and protection of the Aegis BMD platform, thereby enabling the sustainment of an effective TMD capability. Furthermore, the JFMCC retains TACON and OPCON of the Aegis platforms and is able to leverage its capabilities for traditional missions where feasible. Therefore, a support relationship is the optimal C2 relationship for Aegis ships in TMD because it best provides

[17] Countering Air and Missile Threats, JP 3-01, I-1.
[18] "An IADS provides the best capability for mutual support and economy of force for…missile defense of vital areas and protection of the joint force in general." Ibid, xvii.
[19] The essential principles of developing an IADS are: Centralized planning and direction, decentralized execution, planned responses, effective and efficient communications, layered defense, 360-degree coverage, and early detection, location, ID and tracking. Ibid, V-3-4.
[20] There are of course several tactical conditions that must exist, ranging from maintaining the system and training the crew to establishing communications procedures and connectivity of voice and data systems. "BMD-capable" as used above implies that the ship possesses all of these tactical and technological capabilities.

the necessary logistics and protection for the Aegis BMD assets without sacrificing their efficacy in traditional maritime missions.

Logistics or sustainment is the responsibility of the operational commander and is a function normally accomplished by Service components of the joint force even when the unit may have changed OPCON or TACON to a commander from one of the other Services. The Services possess the expertise required to understand and support the needs of their combat units. Thus, the Navy is tasked to support ships at sea, and it is best equipped with the staff, expertise and assets to optimize resources and balance the challenges of time and space for sustaining and defending Aegis platforms performing the TMD mission. Maintaining TACON over both the replenishment ships and the ship being replenished significantly simplifies the coordination of these efforts. For this reason, Navy Task Force Commanders often assume TACON of underway replenishment vessels (oilers, stores ships, etc.) in their area. When the maritime component retains TACON of Aegis BMD platforms, it greatly facilitates the logistic support for that critical, forward deployed asset supporting TMD. In providing support to the JFACC, the JFMCC and staff will inherently consider maritime logistics, but a JFACC's staff would require external expertise to do so.

Ships must be replenished, repaired, and maintained, demanding considerable support to remain onstation for long periods of time. Additionally, the increased vulnerability of a ship performing missile defense may require defensive support from other forces (i.e. land or carrier based air, surface escorts or surface and subsurface screens). These factors require a tremendous commitment by the joint force, and especially the maritime component, to sustain and defend an Aegis BMD platform positioned for a TMD task. Furthermore, the maritime component must ascertain the effects of "losing" its assets to the BMD mission and

compensate for those losses within his maritime force. The maritime component possesses the expertise to leverage Aegis support to traditional missions to the maximum extent possible while the ship is performing BMD. Not only do other components lack the expertise to do so, but they might not even recognize the need. Operational commanders must plan for the additional drain on assets to defend and sustain onstation Aegis BMD ships and develop operation and contingency plans with a realistic view of the capabilities and assets required to meet both BMD and traditional Aegis missions.

But can the Aegis ship be effective in performing a mission in support of the JFACC while TACON to the JFMCC? The answer is a resounding, "Yes." The Navy's Aegis cruisers and destroyers regularly provide effective air defense and strike capability through support relationships within the tactical level, Composite Warfare Commander (CWC) construct and in joint force operational level C2 structures. In that construct, Aegis ships work in supporting relationships, often serving three or more warfare commanders and higher joint force commanders simultaneously. Each warfare commander or joint component commander is responsible for a mission which is performed to some extent by all units in the force, for example strike, AD, ASW, or ASUW. [21] Adding the TMD mission and specifically designating a TMD Commander does not significantly challenge an Aegis ship, even though such a relationship has significant implications at the operational, as well as the tactical level. (It is not recommended to establish a separate TMD Commander, rather it should remain a JFACC responsibility.)

Aegis ships have experience operating in supporting relationships outside of the CWC construct as well. The U.S. Seventh Fleet has assigned a theater anti-submarine

[21] U.S. Navy. Composite Warfare Commander's Manual. Naval Warfare Publication 3-56 (Rev. A), (Washington, DC: Headquarters Department of the Navy), 2-8.

warfare (TASW) commander who employs Aegis cruisers or destroyers in a support relationship. The ships remain TACON to the strike group commander and perform ASW tasking for the TASW Commander. Admittedly this relationship occurs within the same service, but to the crew of the ship there would be little difference between this type of support relationship and providing missile defense support to the JFACC.

An added benefit to establishing an effective, collaborative missile defense C2 structure within the joint force using support relationships is that the framework is amenable to incorporating coalition missile defense forces. Establishing missile defense tactics, techniques and procedures for employing Aegis BMD in a support relationship will pay huge dividends for the JFC seeking to incorporate the BMD capabilities of allies in the future.

An optimal C2 relationship for Aegis BMD platforms would ensure unity of effort, centralized control and decentralized execution, logistic sustainability, protection, and an effective layer of TMD. C2 options must be analyzed in light of their ability to perform these functions while minimizing the impact to the performance of traditional maritime missions. In order to do so, the JFC should assign Aegis BMD platforms under a support relationship for TMD tasking. The support relationship has clear advantages in terms of protection, sustainment and simultaneous execution of other maritime missions

Examining arguments against the support relationship

Many who would oppose the support relationship for Aegis BMD, would do so in favor of more centralized control of missile defense assets under a single commander. Some have gone so far as to argue for a separate component commander for missile defense.[22]

[22] See William H. Bucey, "Centralized Command and Control of Theater Missile Defense," (research paper, Newport, RI: U.S. Naval War College, Joint Military Operations Department, 2006), 13. Also Steven W.

Some of these arguments assume that the threat posed by a successful missile attack outweighs all other threats and that the TMD assets have no other mission tasking. And while there are scenarios where this may be the case, they are not the most likely ones, and often deal with strategic missile defense, not the operational-level TMD. Additionally, there are an insufficient number of Aegis BMD assets to assign them to a full-time missile defense commander.

Others who argue for more centralized control do so based not on the enormity of the threat but because of the paucity of our defensive assets. They assert that the AADC must have TACON of the intercept-capable missiles, which are also effective versus aircraft and cruise missiles in order to provide effective missile defense. Indeed JP 3-01 states that "the important factor is the enemy threat and the conservation of missile defense forces to ensure that unique capability is not exhausted."[23] The concern is that without centralized control of the Aegis ships or Patriot Missile Batteries, the Commander might exhaust the inventory against aircraft or cruise missiles, effectively neutering the force's TMD capability. Yet, this problem can be alleviated through training and by establishing clear guidelines, including preplanned responses for the use of missile defense weapons. Communication and coordination remain critical to the successful conservation of assets, regardless of C2 relationships. Furthermore, a ship's Commanding Officer is responsible for the safety of his ship and crew and must defend both in order to maintain the missile defense capability.

Other critics of the support relationship might argue that TACON of both sensor and attack units is critical to ensure coordination and rapidity of response to the TMD threat.

Holmes, "Theater Missile Defense: Finding a Suitable Command and Control Structure." Research paper, Newport, RI: U.S. Naval War College, Joint Military Operations Department, 2000), 13.

[23]Countering Air and Missile Threats, JP 3-01, xix.

Such reasoning assumes that an Aegis BMD platform would require specific direction in order to perform the mission or that it would be unable to coordinate or communicate with other BMD assets in a support relationship. The communications and data links required for TMD are the same regardless of the command relationship. The JFACC is not less likely to lose communications with Aegis platforms if it has TACON of the assets. So technologically the C2 relationship does not significantly affect the capability to perform the mission. Rather decentralized execution via pre-planned responses has proven to be the fastest way to react to an imminent air or missile threat. Therefore, any tactical benefit gained through a TACON relationship is one that is gained in initial training and coordination and is overshadowed by the added challenges it creates at the operational level. The support relationship enhances decentralized execution, and therefore it is no less desirable than TACON when a rapid reaction is required. The JFACC does not lose missile defense capability by "giving up" TACON of Aegis BMD assets, but a shift of TACON to the JFACC could adversely affect the Aegis ship's performance of ASW or AD and the JFMCC's ability to execute his mission. The support relationship enables the Aegis BMD platform to simultaneously support JFACC and JFMCC missions. With the JFMCC supporting the JFACC for TMD, a ship TACON to the JFMCC can fulfill the JFACC's requirements for deterrence and a first layer of missile defense with less impact to the JFMCC's ability to sustain the ship onstation.

RECOMMENDATIONS

At the strategic level, the President has "eliminated the artificial distinction between 'national' and 'theater' missile defenses" based upon the "blurring" of capabilities and a desire to reassure allies that we are pursuing a missile defense that will enhance national and regional security.[24] However, it is important that we retain these distinctions when discussing missile defense at the operational level. Geographic CCDRs would do well to establish TMD priorities, objectives and command relationships, in order to leverage National Missile Defense System assets to effectively perform the TMD mission in their AORs. Given an increasing missile threat and the paucity of missile defense assets, JFCs will have to make careful decisions in order to provide effective missile defense without sacrificing other capabilities. Much of the focus has been on developing the technology, and although the technology is critical, operational art is needed to achieve mission effectiveness with limited resources**.** A functioning Aegis BMD system, satellite communications, and a common operational picture do not automatically add up to a sustainable and effective missile defense. Adapting these developing systems and capabilities for operational warfare is a significant challenge facing the geographic CCDRs. Establishing the C2 relationship for Aegis in TMD is a first step in defining the boundaries within which staffs can begin to plan, adapt and succeed.

Objective discussion and analysis must be followed by realistic and comprehensive war gaming and fleet exercises in order to assess the viability and effectiveness of established and new C2 relationships. Due to limited Aegis platforms, a JFC may have to choose between defense of bases and allies and defense of high-value units at sea during major

[24] *National Policy on Ballistic Missile Defense, NSPD-23.*

combat operations. Commanders must be forced to make these hard choices in benign environments so their decisions can be objectively analyzed prior to combat operations.

Additionally, missile defense threats must be injected realistically into exercise and war game scenarios. Considering missile defense as a lone mission does not provide a realistic assessment of joint TMD capabilities. The missile defense mission has to be considered and tested as one of several missions being performed simultaneously by the JFACC and JFMCC. While there is reason to be confident of the Aegis' tactical capability to perform BMD simultaneously with other missions,[25] operational commanders must establish C2 relationships that preserve flexibility and ensure effective employment of scarce assets. Realistic scenarios during war games and exercises would likely demonstrate the serious difficulties of providing logistics and protection for forward Aegis BMD platforms as well as the increased vulnerability of the maritime force when Aegis platforms are used exclusively for missile defense.

Once C2 relationships are defined and tested they must be established in doctrine and practice. Overall, joint doctrine provides useful guidance for air and missile defense, but it offers little to assist the JFC in employing Aegis BMD assets or providing the logistics and protection that would be encountered during major combat operations. The February 2007 revision of JP 3-01 states succinctly that "air sorties made available for tasking normally are provided under TACON while surface-based [air and missile defense] forces are provided in direct support."[26] This is a step in the right direction, but it is the extent of the discussion on the subject. Joint doctrine should thoroughly address operational considerations necessary to

[25] Hicks, Extending the Navy's Shield. RADM Hicks observes that "As part of their flight test, both cruisers [the Lake Erie and the USS Shiloh] conducted simultaneous antisubmarine warfare, surface action, antiship cruise missile defense, and Tomahawk land-attack missile strikes, demonstrating the impressive capabilities of the Navy's general purpose, multi-mission Aegis fleet."
[26] Countering Air and Missile Threats, JP 3-01, II-1.

employ naval units simultaneously in support of missile defense and traditional maritime missions. It should also discuss why the "normal" support relationship is optimal for TMD, because the scale of the threat, the novelty of the capability, and the scarcity of assets all drive commanders and staffs to seek tighter control over missile defense assets.

Finally, although I acknowledge fiscal realities, I would be remiss if I did not point out that most of the problems addressed in this paper could be alleviated with the deployment of more--more ships, more missiles, and more BMD experts. The current and planned number of Aegis BMD ships will contribute to the strategic deterrent and form a key node of the layered NMDS. However, the force will be unable to provide a 24/7/365 sea-based defense against ballistic missiles, and it falls far short of numbers that would be required to fight a major regional conflict versus an adversary with ballistic missiles. That being said, the scarcity of assets makes it even more important to establish C2 relationships that enhance, rather than diminish, the Aegis ship's multi-mission capability. Regardless of the C2 relationships that are established, the Navy must continue to grow a core of BMD experts who can populate the CCDR and Service staffs and serve as liaison officers to facilitate the coordination of Aegis BMD assets.

CONCLUSION

Employing naval assets to perform "non-maritime" missions demands that the JFC establish C2 relationships which capitalize upon the capabilities of those naval assets without compromising inherently maritime missions. A C2 option that results in an unsustainable ballistic missile defense or an unsustainable combat fleet is not an option at all. Establishing C2 relationships that enable Aegis platforms to simultaneously accomplish tasks for multiple

component commanders will enable effective TMD and improve flexibility to accomplish other tactical and operational objectives in the AOR.

I hypothesized that a support relationship is optimal for Aegis ships in TMD. As I have demonstrated, the support relationship has clear advantages in terms of protection and sustainment of Aegis BMD ships and enhances the simultaneous performance of other maritime missions. It will prove far more effective for the joint force to employ Aegis ships in support of TMD than to sacrifice the multi-mission platform's other tasks in order to capitalize upon the BMD capability. At the same time, contingency planners ought to expect that Aegis platforms will at times be unavailable for routine missions in order to support the higher profile, often strategic, missile defense mission.

An infatuation with technology pervades much of the literature on missile defense, and to the extent that the technology can affect deterrence perhaps this infatuation is well placed. However, the time has come to focus on the operational art fundamentals required to achieve an effective and sustainable defense should that deterrence fail. Operational considerations will ultimately determine the best way to do so.

A clearly established C2 relationship is the cornerstone for the development of the tactics, techniques, procedures and pre-planned responses that will ultimately overcome any initial anxiety in how to effectively employ the highly capable yet scarce Aegis BMD ships. Defining the C2 relationship for Aegis BMD will define the boundaries within which staffs can create doctrine and real world operations plans and orders, which will ensure success in both TMD and the myriad of other maritime mission sets.

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